Mr. Hugh Harris

Oral History

Kennedy Space Center

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Roger Launius: Good morning. I'm Roger Launius. We're at the Kennedy Space Center on the 20th of February 2002 and I'm speaking today with Hugh Harris, former Director of Public Affairs at Kennedy Space Center for a period in the 1990's and before that time, for a long period, a senior person here working with the media in one of the most interesting and media rich environments that the space program has. Thanks for joining us today. We very much appreciate our continuation from last summer that, when we talked before.

Hugh Harris: Well, I'm happy to be here.

Launius: Thank you so much. One of the things that we'd like to talk about today, just to kind of warm up, is this is the 40th anniversary today of the John Glenn first flight, first orbital flight, of an American in space. Now this was before, of course, you came to NASA and you came to the Kennedy Space Center, but I'm sure that you have some recollections of that particular event and I'm also sure that you have some recollections of John Glenn in general. So where were you in '62?

Harris: Well, in '62 I was working for Standard Oil of Ohio as a writer and I can tell you that I wasn't doing anything except watching that flight because that was one of the most exciting things that had happened. I had covered a little bit of space technology before that; in particular the engines that were built for the X-15 rocket plane and of course this was sort of what I had not expected as the carry-on. I had really thought that the X-15 would have developed further and be what carried Americans into space initially and of course we decided to go a different way.

Launius: Um-huh.

Harris: So here we are with a man on a rocket and it was exciting and certainly something I wanted to see.

Launius: OK. More recently, John Glenn has been kind of a pathfinder in lots of ways for Americans. He is perhaps the quintessential hero in modern American society. He's a fellow who's been in the limelight for 40+ years now. An individual who has captured the imagination and he has come to the Kennedy Space Center repeatedly over the years. Do you have any particular recollections of him during the time that you've been here?

Harris: Well, he has always been an extremely gracious and insightful person. And whenever he's been here he has always, I think, contributed both to the technical things that were happening and to the morale because he certainly is a great person. He, I guess, has always been sort of looked up at as the, you know the straightest shooting astronaut that was ever in the Astronaut Corps. and I think that that's probably a fairly close judgment of him, but he has always been great. I was privileged to vote for him to go to the Senate 'cause I lived in Ohio. . .

Launius: Um-huh.

Harris: . . . for quite a long time. And I felt that although he worked very quietly frequently in the Senate that he really was doing very important things and was very supportive of the NASA program in a sensible way.

Launius: OK. All right. The astronauts that we have today, the Shuttle astronauts and of course the Station astronauts are a very accomplished lot, but none of them have the kind of public stature of a John Glenn. Do you have any sense of why he was so attractive?

Harris: Well, I think being first does a lot for you.

Launius: OK. All right.

Harris: He was the person who was first in, of course, into orbit as far as Americans were concerned. And I always felt very badly, the story which I have heard from very reliable sources, was that, you know he was told after his flight that he was too valuable to the country to be allowed to fly again and of course for an astronaut to be told, you know you can't fly again. . .

Launius: Um-huh.

Harris: . . . I think is really something that would be very traumatic. But I think he made the very most of it and has contributed tremendously. And of course coming back to the program and flying again I think was a very important thing to have happen because it not only showed that people cared about John Glenn and the, sort of rapport that he had with the public which was valuable. . .

Launius: Um-huh.

Harris: . . . but it also showed that we have come so far from the time when you had to be you know at a very, very peak condition and a young fighter pilot. . .

Launius: Right.

Harris: . . . which was what all of the first astronauts were, so I think there was a lot that was gained by allowing him to fly again.

Launius: OK. Yes. And of course the public was enthused in ways that we haven't seen for 40 years. I mean it really did energize remarkably so I thought; it was like 1962 again.

Harris: Yes. (laughter) And they can tell you that overseas it was almost as exciting as it was in this country. The people in other parts of the world I think are even more excited about our space program than most average Americans are.

Launius: Um-huh. Yeah. While you were at, changing the subject, you were at KSC from, I think, the 1970's up to 1998 when you finally retired, so your career very much does span the whole Shuttle era, or almost the whole Shuttle era, so let's talk a little bit about, about the Shuttle and the public's perception and the media's perception of the Shuttle. When it first flew, and we talked a little bit this last time, but let's go back and chat about it again a little bit. When it first flew there was an excitement that I think existed initially with its first flight that we hadn't seen for a number of years. And of course, no astronauts had been in space since 1975, so clearly

there's a period of lag there. What was the experience like here at KSC when you were here at that point?

Harris: Well, on the outside it was sort of chaos. There were hundreds of thousands of people who came to that first launch and we were very concerned that we would not be able to get through the traffic to come to work even though we were coming to work, you know, five, six hours in advance of the launch. So in many cases I had the people at the press site who worked for me stay in RVs out there so that there wouldn't be a problem with their getting to work at the right time. And many of the press camped out there and at that time we were able to have a very lenient policy about that, so there were hundreds of people who stayed on the Center because off of the Center there were so many people on the roads and trying to jockey for a position to watch the launch from. But I think that people recognized this was a major advance in space travel and were coming to sort of a dividing point between having single use type of rocket and capsules to coming to something of course that was reusable, which is of course what happened. And, I think that we don't give the public enough credit for their understanding of how important things like this are. We frequently talk about how the interest has waned and how people are no longer as interested as they were sometimes and then how that interest has revived. My experience has been the public has remained interested right from the beginning depending on what their point of view is in one aspect of the program or the other, but the media has gone to doing other things because the nature of scientific research and technological development is such that it's incremental and in very, very small steps and that is something which causes the media to say, well, we've told that story before, and when there's some breakthrough then we'll tell it again, but

that doesn't equate to public interest. It does help spark public interest, but I think the public has been interested since the beginning and has remained interested.

Launius: I've been reading a number of books that have discussed the public communication of science and there's a statement that is made routinely in a lot of this work that the media who cover scientific activities are not terribly knowledgeable and they tend to accept at face value what they are told. Of the media that you had covering the space program during the period that you'd been out at KSC, I have the impression that these guys are pros and that they have a lot of knowledge, most of them, and are very discerning. What was your experience in working with them?

Harris: Oh, I absolutely agree with. . .

Launius: Yeah.

Harris: .You can't say all of the media because there's, you know, hundreds of people who come who really don't have a whole lot of background, just like any other type of activity, however the ones who cover NASA on a regular basis are very familiar with what has gone on. They study the history of it. They have voluminous libraries. They read everything that they can. So there may only be twenty who are extremely knowledgeable, but they are the ones who represent the largest media outlets and then there's probably a hundred more who are fairly familiar with it and then of course you have thousands who don't follow it on a regular basis because that's not

their regular assignment. But, my experience has been that we have been really blessed in having media who were interested, who really felt a part of it, which we'll talk about later. . .

Launius: Yeah.

Harris: . . . as to what some of the ramifications of that are. But the media really has been involved and have felt that they are an important aspect of the space program right from the beginning and as we have gone through the years, there are hundreds who have become real experts and if you listen to some of the press conferences you find that some of the questions are so technical that most of the people there don't know the answers to them.

Launius: Right. Including some of the people being interviewed I suspect.

Harris: Oh, absolutely. Well, they don't necessarily ask the right people.

Launius: Right, right.

Harris: As a matter of fact there's a cartoon that was done of Mary Bubb, and I don't know if you're familiar with Mary?

Launius: No.

Harris: Well I think she was the first woman reporter who really covered the space program. She worked originally for Fairchild publications, but she became an expert in almost every aspect and there was a cartoon that was done of her by one of the media at some event and the question she was asking was, well, "What are the inventory numbers for these molecules of oxygen?" And that was sort of the depth of the questions that were asked. Obviously that's a fairly facetious one, but the media really dug very deeply in trying to understand every aspect of it.

Launius: In your dealing with the media. These folks are very knowledgeable and they kind of view this as their space program I think in some respects.

Harris: Uh-huh.

Launius: Did you find them to be generally positive toward NASA in what it's seeking to do? Were they critical? Were they always looking for dirt? And I don't think they were necessarily, but what's your perspective?

Harris: Well, I think that when a reporter starts covering NASA or any other field, and is very young in their profession, not necessarily young as a person, that they do look for scandal or for something that's going wrong, because the perception is that it's the bad stories that get the biggest space in the newspaper, get the headlines, catch the public attention, but as they become more knowledgeable about the program that sort of fades away. It's not that they don't cover every aspect of it in a very honest way, it's just that they begin to understand the complexity and

sort of how things fit together and how they grow. And they feel that it's their responsibility to tell that story to the general public. So, for instance, in Challenger we had a lot of people come in who had never covered NASA before and many of them were investigative reporters and of course that mind set is if something goes wrong obviously somebody has to be. . .

Launius: There's a culprit.

Harris: Yeah, there's a culprit there. And so that was a new experience for many of us who felt that they were looking for the truth not necessarily looking for a culprit.

Launius: Ok. In terms of the media that you dealt with, and you mentioned Challenger specifically, before Challenger, there was a sense, which may have been a false impression, that most people had lost interest in the Shuttle missions. Is that a true perception? Were most of the media uninterested before that time and at which point did they stop being really interested, after there were four or five flights, or what?

Harris: Well, I think we go back to phenomenon that I mentioned that as you do something over and over again that the media find that, not a headline story and the editors or the producers take a look at it and say, well, we've told that story before. It's really not that exciting now. We're not going to send somebody. And when we got to Challenger there was only, I think, one network which was going live. Now at the beginning, all of the networks, and many independent stations were live during a long part of the countdown. . .

Launius: Right.

Harris: . . . and the beginning of the flight. And that's because the media recognized that this is an important story to the country and that people are interested and we've got to show it. Now I think that as we went through it, and I think it's probably after about maybe nine, ten, eleven flights then you found that the amount of coverage was sort of shrinking. It wasn't that it wasn't being covered.

Launius: Right.

Harris: And in many cases it was covered live, but the amount of time that was devoted to it was much less. So when we got to into the teens and the early twenties of the flights, then there wasn't nearly as much coverage. Now NASA in some ways inspired, or made it possible for that to happen, because NASA put out a very good television feed which was edited, could go on the air instantly, and they didn't really have to do a lot of work with it. That was developed right from the beginning where we gave the networks and the independent stations about twenty feeds from twenty individual cameras which allowed them to mix and pick out exactly what they wanted to do. They discovered very fast that it wasn't all that easy to put together all of those feeds and so NASA also put out what was an edited feed in which we chose which cameras to show at which times and it really captured what was happening during the launch preparations, the launch, and the flight. So the media became very dependent on what NASA was putting out and as a result, as I mentioned, there was only one network that was going live when we got to Challenger and most of the networks were not even recording because they knew that they could get anything

they wanted from NASA instantly. That turned out not to be the case when we got to Challenger, but that's another story.

Launius: We'll get to that in just a moment, but let me ask you a couple of more questions about this feed. The twenty cameras that you mentioned, I've gotten curious about how those get set up. You've got them in a variety of places.

Harris: Mm-hmm.

Launius: Did you consult with the media in terms of the kinds of shots that they wanted to set that up or where did you guys decide?

Harris: Well, we did consult with the media. . .

Launius: Ok.

Harris: . . . actually we worked very, very closely with the media and it was more of an informal type of thing. We didn't say to the media, tell us what you'd like to have. We had conversations with them. We had conferences with them at which we described what might be available and got their feedback, so all of the media, when I say all of the media, the major networks and many of the independent stations came to the Kennedy Space Center far in advance of Shuttle actually flying and we talked about the coverage that would be available. Now we also talked to the writing press about what they would like and tried to produce our products to

meet their needs as well and their timetables as far as press conferences and that sort of thing are concerned. Doesn't always work very well because the availability of the crew, the availability of launch directors, all that sort of thing pretty much dictates what we're able to do in that area. But, there was a sort of an informal network that we formed and as a matter of fact during parts of Apollo and then into the era of the Shuttle we would send a voice signal to the networks and say we're coming up in so many seconds so that they would be prepared with being ready to record or to broadcast and that sort of thing and what it was about.

Launius: How quickly after launch did you have the edited package together? The sequence.

Harris: Well, we put out the edited thing in real time.

Launius: Oh, ok. All right.

Harris: We had a television producer and director who sat there and selected the camera shots and put out the edited feed. And in most cases that's what the networks and the various stations used.

Launius: Ok. And they could either use it live or tape it and delay it.

Harris: Oh right.

Launius: Right.

Harris: And they could have the other feeds and they could do their own editing and that sort of thing and some of them did and of course if they had a personality, one of their reporters, then they had to use their camera to capture him because we couldn't put somebody from one network on or from one station on. . .

Launius: Right.

Harris: . . . because then all the rest of them couldn't use it.

Launius: Right.

Harris: So we had to give them a very clean feed.

Launius: Did you have voice over on this or did they add their own.

Harris: Well, the voice of the commentator from the. . .

Launius: Oh. Ok.

Harris: . . .mission or from the launch control center was on it and then from the mission control center once the flight had. . .

Launius: cleared the tower.

Harris: . . . got off the ground.

Launius: Yeah. That's a very spare feed though as I recall.

Harris: Well, it's not as spare as you might think.

Launius: Ok.

Harris: As a matter of fact there's a lot of, not disagreement, but there used to be a lot of debate about how much should the NASA commentator be saying as opposed to the other. And we really felt that it had to be enough so that the reporters and the people who were watching it understood what was going on, because if you have long pauses, they say, I wonder if anything is going wrong. So we did an awful lot of talking on the early flights and not quite as much as we went along. And sometimes we still probably do too much.

Launius: Ok. In terms of still photographs of the launches, did the media send their own, obviously they do on occasion, send their own photographers, but did you also have a similar arrangement there where you had standard photography that you would make available for every launch to the media immediately thereafter?

Harris: Yes.

Launius: Ok.

Harris: The media continues to this day to send their own photographers and in many cases there's a hundred or more cameras from the media which are out in the field that are positioned around the pad. This is a very interesting aspect of a launch because we had to send out escorts with them to place cameras in places where it was swampy, there were a lot of alligators, snakes, and frequently in the rain and that sort of thing and the media had to learn how to build camera housings that were not going to allow their cameras to be ruined and we had in many cases, well when I say many, there were several that I can recall, where there was a storm that came along the day before the launch which was not going to affect the launch, but it blew over the media cameras which were out in the field and in some cases dropped them into muddy water so that they had to really scramble and we had to scramble in order to get them back to the locations which of course were in hazardous areas at the time of launch. But, yes, NASA put out their own cameras and they provided photos fairly quickly, in some cases, you know, within an hour probably after a launch. And then getting the media back out to pick up their cameras so they could process the film was a major job.

Launius: Yeah.

Harris: And we had dozens of people, and in many cases volunteers, who worked with us to make that happen. Because they were going to, if you had a hundred reporters out there, or not reporters but photographers with cameras, they were all in different places and they didn't want to be in the same place as somebody else. So you had to take each one of these to their particular location.

Launius: Right.

Harris: And if you had just one person doing that it would have been hours in order to get to all of them.

Launius: And they would have missed their deadlines and been upset with us. Yeah. What you're describing is a fairly complex logistics effort as well as a direct feed with the video to support the media and help them do their job more effectively and it sounds like, and maybe you can give me some sense of this, like it's one of the most aggressive efforts that the United States government has undertaken for, in any of its organizations to help them.

Harris: Oh. I think that was.

Launius: Yeah.

Harris: And I think that it helped lead to the stature that NASA had both in the media and in the general public. Even though the general public didn't see all of the things that happened behind the scenes in order to make the coverage possible they had a feeling that this was not something that just happens automatically, because they didn't see it happening with any other group. And they, this goes back, well it goes back to Eisenhower certainly and then has a ripple effect downward where the first decision to make the space program a civilian. . .

Launius: Right.

Harris: . . . space program was really the key that triggered how is the coverage going to be and then throughout the program at various points, particularly in the early days, but it's not uncommon to have that sort of thing come up even today, there had to be decisions that were made that said, oh no, we are going to be completely open, we are going to tell them exactly what's happening, and we are going to put out the pictures and that sort of thing. I can remember very well, in the case of some spectacular rocket failures, which happened in the earlier days, where the person who was in charge or the director of one aspect of it would say, don't release that stuff to the press, and we would have to say the policy of NASA is that we will release it and it doesn't matter whether you release it or not, some of the press will have it, some of them won't have it, and the ones that won't have it are going to be mad because. . .

Launius: Right.

Harris: . . . we didn't provide what we had previously provided in the way of coverage. So it's an interesting balancing act which fell apart in some ways when we got to Challenger which we'll talk about in the future. But that has to be reaffirmed I think by every Administrator as they come in and at least understood if they don't want to say something specific about it. I think that it's much more easy today for an Administrator to say, well of course that's what we're going to do; however, in the earlier days it wasn't that easy because the government agencies were not nearly as forthright as NASA has always been.

Launius: Well let's talk a little bit about Challenger. The single most tragic event in the space program's history, although there've been other tragic events and other loss of life. . .

Harris: Right.

Launius: . . . you mentioned earlier that by this time it was pretty much viewed as routine when we launched these spacecraft and only one station, I guess, was carrying it live.

Harris: Right.

Launius: Obviously, as soon as the accident took place everybody picked it up and started broadcasting whatever feeds were in existence and running commentary. What was the experience on that particular day?

Harris: Well, it was horrendous because when you have an accident the mindset and actually most of the rules that were in place said we will impound the data and the data includes all of the visual information, all of the written information, all of voice recordings, everything that has to do with that particular event. And you know it's done because you need to preserve the historical record and in order to be sure that you're able to home-in on what was the actual cause of what the accident was. In the case of Challenger, that kicked into place. Now NASA Public Affairs had a plan which said, you know, here's what we do. We continue to do commentary. We continue to put out the information. We continue to feed the television signals, the radio signals, etcetera, just like we normally would do. We don't talk about, we don't speculate as to what might have caused this to happen, but we do say, here is what is happening on a minute by minute basis. Because of various reasons that really got turned around at the last, well second, as that

was happening. And there were, well, a number of reasons, let's talk about that. First of all the Administrator of NASA was brand new. . .

Launius: Right.

Harris: . . . to the Agency. . .

Launius: Right, William Graham.

Harris: . . . right, Bill Graham, and also new to his particular job and wasn't here as a matter of fact. In most cases the Administrator of NASA is here at the Kennedy Space Center when there's a launch. In this particular case because of the perception it's more routine, he was in Washington. The person who was the Associate Administrator of Public Affairs was also new to her job.

Launius: Um-huh.

Harris: And had not gone through all of the thinking process that had gone into the development of what the plan would be and as a result made some decisions at that time, because she didn't believe that there was really a whole lot to talk about at that particular point and also because the plan called for a senior official like the Associate Administrator for Space Flight to come and talk to the press within an hour or so.

Launius: Right.

Harris: That was another thing that didn't happen, which would have headed off some of the things that happened and the feelings that the press had in the future. So you had the technical people anxious to find out what went wrong and how do we fix it and let's make sure we have all of the evidence. So the people responsible for that rushed to the press site, took all of the video tape that was available and put it under lock and key. And partly because of a misperception, that impoundment means not allowing it to be used and actually impoundment really says you preserve it. . .

Launius: Right.

Harris: . . . but it doesn't say that it can't be copied or used as it normally would be, but that's sort of a fine line that you walk with. The other thing that happened was the technical world said because it was such an unknown as to what caused the accident, maybe the press cameras which are out in the field have the clue that we are going to need and therefore we are not gonna let the press have their cameras back.

Launius: Oh, my!

Harris: . . . (laughter) which was calculated to make people very unhappy, the media. And it took, I can't remember now exactly how long, but it took us a long time and I'm talking about days before we were able to get the film back to the people, or back to the media and led to

lawsuits by the New York Times and others against NASA. The other thing that happened at NASA Headquarters, well, it happened all over, but NASA Headquarters made the decision of course, was they decided that in order to make sure that everybody got exactly the same answer to a question that all of the questions had to go through Freedom Of Information for as far as any sort of records were concerned. So for instance when the media wanted to know what was the temperature at the launch pad at the time of launch it had to go through the Freedom Of I\Information process. Now we had never put the press through the Freedom Of Information process in the past for something that was routine and there was no technical or legal reason why it had to be reviewed that thoroughly. We had always said if it's available through Freedom Of Information we will give it to the press without making them do that because we're going to do it anyway. . .

Launius: Right.

Harris: . . . and why go through all of the hassle. However that quickly taught the press who really didn't know a lot about the Freedom Of Information Act how to make use of that which then clogged the system tremendously because there weren't enough people to process the requests. So there were a number of things that happened and the fact that the phone system went down immediately after launch didn't help things either.

Launius: Was, that was just happenstance?

Harris: It was because of overload.

Launius: Ok.

Harris: Everybody was calling each other, or trying to call each other, either to find out what was happening or to say what happened, what am I supposed to do and it overburdened the phone system.

Launius: Ok.

Harris: We in Public Affairs were very fortunate because we had a system which did continue to work.

Launius: Ok. So nobody pulled the plug saying we're not going to let. . .

Harris: No. Nobody. Well, they did have to pull the plug because it had gotten overloaded.

Launius: Right.

Harris: And then put it back in, if that's what they have is a plug. It's actually a little more complicated. But they had to dump all of the lines and then. . .

Launius: Bring the system back up.

Harris: ….bring the system back up. But that took quite a long time so there was a fair length of time when there were no phone systems working in the Center.

Launius: Now, during all of this, a whole series of decisions are being made. It sounds like ad hoc.

Harris: Yes.

Launius: Not following a plan that had been in place.

Harris: Mm-hmm.

Launius: Which admittedly you hadn't had to refer to before because there hadn't been such an accident.

Harris: Well, that's right. And one of the things that you have to have with a plan, there was another key factor there that I hadn't mentioned, and that was the fact that the Public Affairs plan was not integrated in the technical group's. . .

Launius:: Oh.

Harris: . . . plans properly. The other contingency plans for the various elements of the Shuttle had all of these numbers on them and they referred to things very specifically. There was

no place in the technical plans that referred to the Public Affairs plan, even though the Administrator of NASA at the time, which I think was Dick Truly, had, no I guess it wasn't Dick Truly, whoever was the Administrator, and it may have been Mr. Beggs, or going back further, had signed off on the plan, but it nevertheless had not been integrated properly with all of the other plans. And that was a serious lesson that we learned and then we went on to make sure that that didn't happen again. Although I fear that as we move forward those things get out of date and the same thing could happen again.

Launius: Ok. Quite possible (laughter). The media who were so used to NASA being so forthcoming with everything, providing video feeds, providing pictures, providing information, providing people to talk to them. Obviously you said earlier they were upset. Did they feel like they were being betrayed? Did they feel like NASA was stonewalling?

Harris: Well, I think there was some thought that there was stonewalling that was going on. They, I don't think they thought they were being betrayed. However, the media who were here, who normally covered us were much more understanding than the people who were coming in because we had a thousand new media come in after the accident and many of them had never covered us before. The other thing that happened was that NASA management did not make people available to come out and talk to the media. As a matter of fact, I had to bring in volunteers who were retired NASA technical people to talk to the media about fairly mundane things like how do these things work for instance. You know, how do the engines work, do they gimble, and all that sort of thing. And nothing that was actually related necessarily to the accident occurring but just how does the Space Shuttle work, because all of these people who were

coming in really had not covered us before, many of them were investigative reporters so they wanted to know what happened, whose fault was it. . .

Launius: Right.

Harris: . . . and they wanted to know it right then. And we were not able to get a senior official to come to the press site for about five hours after the accident. Now in some ways part of that furor was probably misplaced because the accident had occurred in the sight of the entire world.

Launius: Right.

Harris: . . . and it had been put out on NASA video. It had put out on the voice communications. So it was not that you were hiding the fact that we had an accident and the technical people simply didn't know the answer to what caused this instantly and scientists and engineers are always concerned about saying the wrong thing and leaping to conclusions. I mean, they want a very deliberative process and many people understand that, but, there were, as I say, a number of decisions that were made that really it made it look like there must be something to hide.

Launius: One of the things that I've heard some people talk about is that obviously you can't speculate on what's going to take place. An instant analysis is one of the real problems of the electronic media, but was there anybody inside of the agency other than yourself and the Public

Affairs people who were lobbying with the technical folks to, you've got to come out and explain what you know at this point, you don't have to speculate, and what was the reaction?

Harris: I'm not sure there were, I think there may have been some technical people who felt that, yes, we should be doing that, but I don't recall hearing any voices saying yes, you've got to go do that, other than the Public Affairs people. And even though she was brand new to the job, Shirley Green, who was the Associate Administrator of Public Affairs at that time really worked very hard to try and make that happen. Her background was in the political arena and had worked primarily with the Bush people, but she tried very hard; Chuck Hollinshead who was the Director of Public Affairs at the time here worked very hard to try and make that happen too. But you had a number of things that were sort of conspiring against that, that was the feeling that you don't want to say the wrong thing or to do any speculation and the fact that nobody really knew at the beginning what had caused it. Matter of fact, the initial concern was that it was the engines on the Shuttle, on the Orbiter itself. . .

Launius: The main engines.

Harris: . . . that caused it, because the main engines were using very, very high pressures that had never been used in engines before and everybody felt that if there was a soft spot in that process then that was where it would be.

Launius: Right.

Harris: As it turned out of course there was nothing wrong with them and they worked fine.

Launius: Right. Five hours after the fact who was the senior official that came out and what'd they say?

Harris: I believe that Jesse Moore came over. . .

Launius: Ok.

Harris: He was the Associate Administrator for Space Flight and he was not able to say a whole lot other than here is what was happening and that we're looking into it and we have all these people doing that. I really would have to review the tapes to know specifically what he said but there was not a lot of substance to that.

Launius: And what was the coverage of initially as the next day or two after the accident? How were most of media reacting? What were they saying?

Harris: Well, they were really scrambling because, for instance The New York Times had, I believe, a hundred and fifty people who were working on that story.

Launius: Wow.

Harris: And whenever you devote that many resources to covering a story then you're going to have everything ranging from little biographies to a technical explanation of the entire vehicle and you're going to have editorials, you're going to have everything because they're devoting a big chunk of their people power to covering this. The same thing was happening with the networks who had hundreds of people also who were involved. So you had a lot of people scrambling to do a lot of stories and not much information.

Launius: Ok. And, were they fairly neutral in their coverage do you think?

Harris: Ah. . . They started out fairly neutral. There was a lot of criticism and the criticism was I think not so much in there being technical problems, as in the way it was being handled, and this is partly my perception, because. . .

Launius: Sure.

Harris: . . . I was in the handling process.

Launius: Right.

Harris: However, there was also a tremendous amount of guilt that was felt by the media because the media who normally covered us felt that they were really part of the team and they should have uncovered whatever the problem was before we had the launch and prevented it from happening. And of course, the more serious things which came out fairly early was the fact

that some people had objected to the launch and had the feeling that there was a major problem and probably we shouldn't have been launching Shuttles at all at that particular time. That's a very difficult question to answer. If you satisfied everybody's concern about the dangers of launching a rocket of any sort you'd probably never launch a rocket.

Launius: Right.

Harris: And so, ever since the very beginning of time as far as rockets are concerned somebody had to say we'd done the best that we can and we believe that it's going to work fine, that we're not jeopardizing people's lives, etc. And we're going to go ahead and do it despite the fact that we know everything is not absolutely perfect. And I can tell you, because I sat in the control room, I listened to most of the major channels of information that were flowing back and forth, that not one person brought up the concern with the solid rocket motors during the countdown, at least that I heard, and not one organization objected to the launch with one exception and that was that Rockwell objected based on the fact that they were afraid that ice which had formed on the tower might damage the heat protection. . .

Launius: Right.

Harris: ….on the Orbiter, and so they were saying I don't think we should do this because I'm afraid that some of the tile is going to be damaged by the ice falling from the launch. There were a number of analyses that were done of that and a determination was made that the ice was not going to fall in a way that would damage the tile and they removed their objection. But in the

end, every element of the people who had to make that decision advised Jesse Moore and the Launch Director that they were ready to go. Now, you'd have a very hard time I think as a Launch Director saying, ok everybody says it's ok to go but I have this funny feeling and we're not going to do it when you have millions of dollars on the line in order to turn that around. So if there is blame to be had it was very widespread. Now there was a communication problem, that's something which hopefully was solved by a number of things that were put into effect after Challenger and should the things which had been brought up have been elevated to higher levels and had reexamination or would the decision have been the same? I suspect that you might have ended up with the same decision. I can remember other cases where a launch director, in this particular case it was an expendable vehicle, I think an Atlas Centaur, who was told during the time when you poll everybody that they are go, everything in each area was go and the rocket did not get very far before it was hit by lightening and exploded. And when the launch director walked outside of the blockhouse he said, "My Gosh, did I launch in this kind of weather?" And, you know, people are pretty sequestered from things that are out there just as he was sequestered from the weather. I think that Jesse Moore and Gene Thomas, who was the Launch Director and others were sequestered from a lot of the discussions that had gone on in the days preceding the launch.

Launius: Yeah. And that's actually what Gene Thomas said, he said that, "When I went and polled everybody, everybody said it was fine. As far as I knew we were good to go."

Harris: Right. And all of us, matter of fact, I never thought that we were going to launch that day in looking just at all of the ice and that sort of thing.

Launius: Right.

Harris: So I was surprised when it went, but it was not based on anything other than gee, this doesn't look like the kind of weather we normally would launch in.

Launius: Right. And I've talked to Jim Beggs in the same way and he said, of course, hindsight's twenty-twenty.

Harris: Absolutely.

Launius: He said, "You know, had I been the Administrator at that point in time and been down there I would have told them not to go, not based on any scientific analysis, but by looking at the gantry and seeing all that ice hanging on it." Again, hindsight's twenty-twenty.

Harris: Yeah. And that's absolutely right, I think, and, well I'll get to another part of that in a second, but the fact is that at levels that are getting fairly high it is very difficult for somebody to say, I think all of you, the rest of you guys are nuts, we're just not going to do it. And that's where you have the launch director while he is a fairly senior official, he's really not the most senior, I mean, he has bosses to report to too. Jim Beggs only has one, and that's the President. . .

Launius: Right.

Harris: . . . and making a decision like that is not probably going to be criticized in the same way that it would be if it was somebody at a lower level.

Launius: Right. Thank you very much for being with us. We're going to change tapes in a moment and continue our conversation. Let's just sit here quietly for a few seconds.

Harris: Ok.

Part II

Launius: And we're back. I'm Roger Launius. I'm talking to Hugh Harris today on the twentieth of February 2002. We're talking about Challenger and the reactions to Challenger and the media coverage of Challenger. Thanks for joining us. When we were speaking before the break we were talking about the difficulties that NASA faced in terms of getting the information out to the media about the Challenger accident and the fact that no senior NASA folks were available to talk immediately and that led, of course, obviously to wild speculation on the part of people who had to have instant analysis. What did happen later in the day in terms of the coverage that started to emerge? There were some people that came out to talk.

Harris: Well, yes. We eventually were able to get, and I believe it was Jesse Moore, who was the Associate Administrator for Space Flight, to come over and talk to the press. He was not able to tell them a whole lot and we knew that that would happen. The fact that it was five hours after it happened made it worse because if you say immediately after something happens, really

we need time, I have no idea exactly what caused this, here's what we know, it's a lot easier than five hours later.

Launius: Right.

Harris: Even though five hours is not a very long time in the scheme of history. But probably the most serious thing that happened was the lack of people to talk to the media about things which did not involve the accident. Everybody was tied up or said to be tied up in the investigation and therefore were not available to answer simple questions.

Launius: You said that you brought in some retirees who were knowledgeable about. . .

Harris: Right.

Launius: . . . the solid rockets and so forth.

Harris: Yeah, engineers who were knowledgeable about, well, all aspects of the Shuttle. Because at that point we really didn't know that the solids were the things that were the problem.

Launius: Numbers of people showed up immediately thereafter to start covering the story, some of whom were not terribly knowledgeable.

Harris: Mm-hmm.

Launius: The coverage the next few days was fairly neutral but it started to turn ugly I think at some point. What. . .

Harris: Well, I think it was fairly neutral. The press were trying to say, here's what happened. Of course they wanted to say here's why it happened.

Launius: Right.

Harris: And here's who is at fault if anybody's at fault. But they weren't able to do that. NASA probably is its own worst enemy in many cases in that we really provided for instant news happening in the proliferation of satellites and the fact that you can cover something as it happens anywhere in the world practically. And then in the science area NASA pioneered the sort of the practice of saying, here's what we're learning from Mars or Jupiter, wherever it is and here's what it might mean. Now it's too early to really know, but let me tell you sort of what my initial thoughts are. NASA did that to themselves and I think it's great, I'm not saying that this is a bad thing, but when you have an accident and then all of a sudden you won't say anything then you have a problem because if you're willing to talk about what you might be seeing on Jupiter and you're not willing to talk about what you might see at the Kennedy Space Center then you have a perception problem, even though it's apples and oranges.

Launius: Right.

Harris: It's an entirely different thing.

Launius: Did your colleagues in other organizations, like over at Patrick, did they help out at all in any of this?

Harris: Oh, absolutely. And we had help from the people at Patrick, we had help from the Coast Guard, we had help from the Navy. We had a lot of help come in, of course, and we had help from other parts of the agency too, and people from NASA Headquarters who were here. There wasn't a lot that they could do and the people who came from the other services of course were not able to comment on what's going on in NASA cause they weren't knowledgeable about the Shuttle or about what might be going on. So they had to comment about their particular role. Now the Coast Guard role was looking for the pieces of the Shuttle and the recovery of the crew cabin and remains of the astronauts. So they were able to say, well here's what our ships are doing and we had a briefing every day in which they talked about what they were finding and then of course we had a place where all of the pieces were brought to and were laid out for the investigation . . .

Launius: Right.

Harris: . . . in the position that they would have been on the Orbiter or on the solid motors and that sort of thing.

Launius: Um-huh. There were multiple investigations. There was obviously an internal NASA investigation. That's probably the bulk of the work that was being done, I think over in the hangar where they were laying out the pieces. There's the Presidential Commission that was

established, the Rogers Commission. There were probably some other things as well that fed into these various programs. How did the media respond to those and how was information about what these various groups were doing transmitted to the media?

Harris: Well, that was somewhat of a problem and one of the problems that NASA had was we were normally used to saying here's what's happened or here's what we've learned as we learned it. . .

Launius: Um-huh.

Harris: . . . or as we understood it at least. And all of a sudden everybody became very worried that if we don't tell the Rogers Commission about these things before we talk to the media about them that they are not going to be happy with us. And of course that's quite possible that that's true, I mean they did not necessarily want to find out about what was happening through the media.

Launius: Right.

Harris: And on the other hand the media felt that if you had to wait until there was a hearing they just were being denied the information as it became available. And in many cases they were willing to speculate about that too or, or not to speculate. And I can remember in one case, well we always had rumors about the fact that they had either found the crew cabin; they hadn't. They had found the solid rocket motor piece in the nozzle or the casing that showed the burn marks.

And there were a number of stories which came out at one particular point that said that yes it had been found when it hadn't actually been found. And I know that one media person who had come to me the day before and said you know, we understand that you have found this, what can you tell me about it? And I said, "To my knowledge that has absolutely not been found and I think that if you go with this story which is rumor that you're going to be wrong." Well, that person, after all of these other stories had come out in the other media, was sort of castigated by their boss who said, why do all of these other outlets have it and we don't have it? And the reporter said, well because I'm assured that that's not the case. Well, when the next hearing came up it was reported to the Rogers Commission and to everybody who was there that that had not indeed been found yet. And the reporter was practically in tears saying that she should've had the story even though it wasn't true simply because. . .

Launius: Everybody else had it.

Harris: . . . everybody else had it.

Launius: Maybe that person should have written a story that said these other people are saying this, but it's not true.

Harris: Yeah. Well, I think that that would have been an excellent way of handling it.

{laughter}

Harris: But there were reporters who lost their jobs during this period because of a perception by the management that they weren't as aggressive as they should have been. And these were reporters that we had known for quite a long time who worked for very prestigious publications in the country and were very, very good and knowledgeable type of reporters, but they were not willing to speculate, they were not willing to talk about things which had been rumored as though they were real and you had to give them a lot of credit, but in the long run they were perceived as not being as aggressive as the other reporters.

Launius: Well that raises an interesting question in a broader context, in terms of the relationship of the people who cover an arena, whether it be space flight or the DOD, or whatever it happens to be, versus those who are kind of brought in who are kind of the investigative types. Is that true across the board? I mean, do other organizations have similar relationships with people who have been almost a member of the family in some respects? If they're well known and they do this on a routine basis, and you all know each other and have a certain trust.

Harris: Right. And that has been a very valuable asset to NASA because I think that we formed better relationships and very honest relationships with the media which has served both the media and NASA well. It doesn't mean that those people didn't criticize the agency because they certainly do whenever there's something that they feel they ought to criticize the agency about. And it just meant that you had a pool of people who were very knowledgeable and as a result even when you got criticized it was probably accurate rather than you know just speculative.

Launius: Um-huh.

Harris: But I think that we have gotten pretty much back to having a good relationship with the media but it has never gotten back to where it was before Challenger. The media will, I think, even though many of them have retired now or have gone on to other things, never will have quite the same trust that they had before and that's unfortunate.

Launius: We were talking earlier, in the aftermath of Challenger and how it was handled, I mean at the point of the accident it's no longer a technical issue, I mean obviously you want to find out what happened, but it's really a public relations issue.

Harris: Um-huh, partly, yeah.

Launius: And did you all go through a set of lessons learned and . . .

Harris: Well, yes we did.

Launius: OK.

Harris: We certainly went through extensive lessons learned. Now I'm not sure that we captured all of the right ones, but we did capture most of them. Now one of the things that happened and I didn't talk about this before, Public Affairs was very aware that if you have a plan, a contingency plan for when things go wrong, that people have to know about it. . .

Launius: Right.

Harris: . . . and that they have to practice whatever it is. We had a practice set up for some time in February which turned out to be after the accident because of the new administrator and a number of new people that were in the program. We never got to that point and as a result we probably performed much more poorly than we would have if we had been able to go through that exercise. After the accident the entire plan was reassessed and there were a number of practices that had been gone through on a regular basis, as I recall we did them about every 6 months or something there for a while. And I suspect that there hasn't been one now for several years.

Launius: Um-huh.

Harris: And I really worry that as a result that you could have the same sort of things happen in the Public Affairs area that happened before. Even though people say, well we remember what the problems were. But you really don't know until you go through and you practice what it is that you're supposed to do and everybody understands what their particular role is. One of the things that you can't practice is the case of having the new Administrator who does not have the background with NASA that happened in the case of Bill Graham coming in. If Jim Beggs had still been there I don't think there ever would have been a Rogers Commission. That he would have instantly set into motion the sort of investigation that would have made the White House and Congress feel comfortable and that you would not have needed this other

group. They obviously did a good job and a very thorough job as evidenced by the stacks and stacks of reports that were written . . .

Launius: Right.

Harris: . . . as a result of that and the fact that we did get back to far more robust hardware and safe flights for more than 75 after Challenger occurred. But, if the investigation had not taken that additional step which then caused a dislocation for how do you deal with the information and the media and then all of that sort of thing, I think it would have gone more smoothly. After Apollo there was a very thorough investigation and of course it resulted in a very successful moon program.

Launius: Um-huh.

Harris: I think the same thing would have happened with the Shuttle, however, having a new Administrator who did not have the background that allowed him to swing into action instantly caused us to have a whole new thing happen.

Launius: Right, right. If there were, and you've enumerated some of them already, but if we could recap them, if there were say five major lessons learned that come out of this for folks who are in your chair today, what would they be?

Harris: Well the one thing that we fixed, I talked a little bit about the photographic problem. .

Launius: Right.

Harris: . . . and the problem with the video tape not being available, being impounded. I think we were able to capture what impoundment meant in the subsequent plans which were written. However, what I'm not sure has ever been captured is how you deal with an accident in which there are injuries or death occurring within camera range. Now in the case of the Shuttle, it happened fairly close, but it was far enough away that you couldn't actually see the people.

Launius: Right.

Harris: In the case of an accident occurring on a landing for instance out at the Shuttle Landing Facility or somewhere close by, we wrote a plan for how that would be handled, but I don't think it has ever been incorporated properly in the contingency plans.

Launius: Um-huh.

Harris: So that's one thing I worry about. But, in the case of the video tape, in the case of the Challenger accident or another type of accident and the still photography which became a serious problem, I think we were able to solve that. We met with the media in the case of the still photography plan and what we worked out was, and with NASA management, that if the media signed an agreement that they would make available at the earliest possible time either copies or originals of what they had shot, then we in turn would make sure that they got those cameras back right away so that they could use them. And I don't know whether that's still happening

now, but for many years for the first launches and subsequent ones we did have a thing where they had to sign in if they were going to put a camera in the field, they had to agree that they would make available to NASA that information. In the case of the video, NASA spent quite a lot of money in order to make that system redundant so that everything that feeds into the press site also feeds into the operation center so that there is instantly a copy of everything that we had in the press site. Now one of the things that the television coverage of a launch actually has grown in some rather strange ways, for instance if you go back to the beginning of the Shuttle program you had senior NASA officials saying we will never need color television coverage of the technical aspects of a launch. And then . . .

{laughter}

Launius: Wrong.

Harris: And Public Affairs saying well you know we have got to go to color, because color television is here and we're not going to have black and white you know television feeds. . .

Launius: Right.

Harris: . . . off of that. But in any case, then Public Affairs had to really scramble and seek funding which eventually we were able to for color cameras and for color mobile cameras, for color fixed cameras, in various places. Now one of the things that happened and I can't remember exactly when this occurred, but there was a case where there was a fire, a hydrogen

fire that occurred on the gantry and it could not be seen with the black and white cameras but it could be seen with the color cameras that Public Affairs was using. And all of a sudden the technical community said, wait a minute we have to have all of those cameras. You, Public Affairs, have to use your cameras to get us the stuff that we need because we don't have them. Well, it was one of those cases where you had a problem because you really didn't have enough to satisfy both constituencies . . .

Launius: Um-huh.

Harris: . . . and of course the technical people started buying color cameras and we were able to move on with the program.

Launius: Right.

Harris: But, as a result of the way that that started, Public Affairs had cameras in different places than the technical people did and there was always a belief we would pool our efforts and share whatever we had. Well, in the case of an accident, sharing meant the technical people taking away the resources that Public Affairs had to work with the media. And so that was solved by redundant feed so even if it was a Public Affairs funded camera there was a way to split the signal coming and it was being recorded in the Launch Control Center and also at the press site so that the tape that's at the press site does not have to be impounded but is available to be used with the media in the case of another accident. So we were able to solve that particular problem which was a major lesson that we learned from the Challenger accident. And at least for a time

we were able to capture the interest of people in having practice sessions so that everybody knew exactly what their role was in the case of an accident.

Launius: Right.

Harris: For instance, how soon do you have to get to the press site and who are the people that are assigned to do that and also some of the other things. So, I think the plan was improved. As I say I'm concerned that there are other things that should be done and that it hasn't been updated as vigorously as it ought to.

Launius: Um-huh. Would one of the other lessons learned, it sounds like would be to get somebody of a senior nature out in front of the media as quickly as possible?

Harris: Right.

Launius: To say something.

Harris: Well, we knew that right from the beginning and that was in the plan. The problem is that the senior person really wants to know everything that they can and that process tends to take a life of its own. Obviously in the case of the Challenger accident the root cause was very deep in the thing so even though Jesse Moore in particular went and looked at videos tapes and that sort of thing in preparation, then had meetings, but the meetings went on and on because people simply didn't know the answers so it tended to drag on and having not practiced he didn't

say I'm sorry I've got to stop this now. I've got to go to press site and then I'll be back. But hopefully that's going to occur properly in the future.

Launius: OK. All right. Let's move on from Challenger unless you've got any other comments that you'd like to make about that. There's a recovery effort that takes a couple of years. . .

Harris: And probably we ought to just touch on the fact that you need to be concerned about the emotional relationship that people in the investigation, in the recovery effort have with either the people who were involved in the accident or possibly even other people in the process. That was a serious problem in the Challenger accident where the search for the remains of the astronauts, for the crew cabin and the handling of that could have been done better had there not been an emotional involvement with some of the people involved.

Launius: Um-huh

Harris: Most things that that go wrong happen because of the best of intentions of the people who are involved. You know, in this particular case and in the case of many other things that go on in other parts of life the people are trying their hardest to make the very best decisions that they can not only for themselves but for all of the people involved, for families and all that sort of thing. You find that certainly in the police community and in the NSTB and various other agencies that are involved in accidents and having people who are not emotionally involved in whatever that is certainly makes it easier for, I think, the right decision to be made.

Launius: Ok. Let's talk a little bit about recovery…. .

Harris: Ok.

Launius: The recovery moving back to return to flight. It seems like NASA went through a whole period, and not just NASA but the contractors and everybody else associated with it, went through a period of soul searching, technical fixes, and return to flight ultimately. What was the public, and especially the media perception, of the launch in the fall of 1988 in which Rick Hauck and company took STS-26 up? Was there fear, concern, excitement, probably all of those things at some level?

Harris: Oh yeah. Absolutely.

Launius: But, what was it like here?

Harris: Well it was a madhouse.

{laughter}

Launius: Ok.

Harris: There was a concern not only for the safety of the astronauts and the vehicle, but there was a concern for the people who were watching that was far above what the concerns had

been in the past. And, one of the things that was done, there were a number of safety studies that were done that had to do with what if there is an accident with the Shuttle that occurs much closer to the pad than occurred in the case of Challenger and what sort of danger are you putting people in who are out here to watch. Now we were used to having tens of thousands of people out here and all of the press went to the press site or in some cases they even went to forward observation places. Well, in the case of STS-26, the plan that had come out restricted the number of people at the press site and at all of the various other locations to much, much smaller numbers than had been in the past. And we had to have a very rigid set of rules as to who could be at the press site and the criteria for being at the press site had to be that that was only place that they could do their job from. Now in the case of people who were writing stories you could obviously write a story somewhere else.

Launius: Sure.

Harris: Now, this did not tend to make the writers very happy to say, well you can't be at the press site. So we had to set up, basically, a couple of press sites and one of them was the causeway which is seven miles away from the pad, so we tried to supply all of the information that they would get at the press site to this other place and to, in a nice way, persuade them that that's where they had to be. So you had mostly the electronic media, who were broadcasting directly, at the press site and I've forgotten the exact numbers now as to how many could be there. It seems to me it was no more than 500, but there were a couple of thousand press who wanted to come and they didn't want to be seven miles away. . .

Launius: Sure.

Harris: . . . on the causeway which is where we used to send all of the cars with the car passes. And that was not considered the prime. . .

Launius: Right.

Harris: . . . viewing area.

Launius: Well it's much farther.

Harris: And, so as a matter of fact, I had to spend hours at the press site listening to people explain why they had to be there and trying to make a decision as to whether that was really the case or it wasn't really the case, was not the way to remain popular with the press certainly.

Launius: No.

Harris: Although in the end I think they all understood that that's the way it was working and of course some of that did get relaxed and things went on more normally than they would have, but that was one of the concerns that came up and they had to deal with.

Launius: Of the five hundred people who could be at the press site. . .

Harris: And I may be wrong on that number.

Launius: Well, whatever the number is, it's limited. . .

Harris: Right.

Launius: And you had to make hard decisions. Did you have a lottery? Did you make a decision, you and not you. . .

Harris: Well, we did make a decision, you and not you, but it was based entirely on, we set up a written criteria, this is how we decide. We publicized that to all of the media so that they knew instantly whether they fit into the category or not and then of course, as I say, we tried to make it equal as far as access to the information and to access to the outside world, were there phones available, all that sort of thing. So NASA went to a lot of trouble to try and make this work and I think by and large it did. But the criteria was that you could not do your job from any other location and therefore you had to be at the press site. So that's basically the way it worked and, and it worked fairly well. The wire services, I think we decided that they had to be there because of the difficulty of setting up a whole different wire system down on the causeway.

Launius: How long did you have that second press site in place? Was it just for STS-26 or did it last for some time thereafter?

Harris: It seems to me that we only did it for STS-26, but we may have done it for more. Certainly it became easier, and the numbers went down. We had a couple of thousand people who wanted to be here for STS-26 and there weren't quite as many for 27, 28, etc.

Launius: Ok. So it becomes more routine and fewer people are covering it on a live basis.

Harris: Right. But we have gone back to a couple of thousand people at the press site for STS-1 and for some of the other ones after that. So it wasn't that the site couldn't accommodate them, it was simply that we had the additional safety concern.

Launius: Now we've routinely flown since STS-26.

Harris: Right.

Launius: There's been a couple of close calls, but generally speaking they've gone off without a hitch and again I think we're into a, kind of mode where we probably were in 1984 and '85 that this is kind of routine. The public's perception is that it's routine. That may be the media perception as well, I suspect it is. How has the media's coverage and the public's approach to this changed since that time? Are there any defining approaches that you can recall, that the folks have?

Harris: Well, I think that the perception has not been that it is as routine as it was immediately before the Challenger accident occurred. You may recall on Challenger that we were flying the first teacher in space.

Launius: Right.

Harris: We had already flown a senator and a congressman fairly recently before that. And we were in the process of selecting the first media person to fly in space. All of which then went out the window after Challenger and has not resurfaced, I shouldn't say it's not resurfaced, there's been a desire on the part of a lot of people to once again fly. . .

Launius: Right.

Harris: . . . so called civilians in space, but that hasn't happened. So I think that the perception has never gotten back to exactly where it was before Challenger occurred, that this is a very safe, routine, almost automatic thing. I would say off hand that the media coverage certainly has dropped off to pretty much where it was before Challenger, where they're not broadcasting things live and they are trying to home in on what is the new or the most interesting part of what's happening. We get a little spoiled here in Central Florida compared with the rest of the country in that this is where it's happening and therefore the things that we see on television are much more extensive than what is seen by the rest. . .

Launius: Right.

Harris: . . . of the country. But the NASA Select system actually is very, very popular and it is amazing the number of people who say, I live in Kansas or out west or someplace that you would not necessarily expect and I would be lost if we didn't have NASA Select and be able to watch all of the launches and all that sort of thing. So I think there's widespread interest throughout the country in what NASA is doing, but the media interest has declined and possibly to a sensible level. I mean it is really not necessarily the most important thing that's happening in the world at any given time. It is extremely important in the fact that it affects the quality of life throughout the world. What NASA is doing, and that of course is something that is very difficult to capture, something I spent all of the time I was working with NASA trying to help with, and that is to try and get that message in the proper perspective as to what does this mean to our civilization. I frankly think that it's the most important thing that really has gone on in our civilization. You can argue that the relationship of people to people and wars and all that sort of thing is more important, but in the long run I think that wars, famine, pestilence, all these sorts of things, probably are affected more by gaining additional knowledge about our particular environment and that the NASA program has done more for that area than any other program, that I think, that has ever existed. So I think there are a number of factors that you have to look at in what do you want to talk about with the media, what do you want the public to understand. I think the public understands that this is something which is pretty important that's happening within their lifetime and is going to affect the lives of their children. And their own lives for that matter. . .

Launius: Sure, sure.

Harris: . . . if you take a look at the state of communications in the 1940's, fifties, even sixties when John Glenn first flew and today, there is a world of difference.

Launius: Well, there really is. And the Shuttle surprisingly, we found this over and over again when we start looking, it's an icon of modern America and it's an icon around the world, it's recognizable, everybody regardless of where they are from and regardless of their economic status and regardless of their technological capability recognizes the Shuttle as a symbol of American greatness.

Harris: Um-huh.

Launius: I mean in really fundamental ways. And that is, I believe, directly related to the things like all of the press coverage of the Shuttle launches and the feeds that go out and that perspective. It's amazing. They may not know what NASA stands for in terms of National Aeronautics and Space Administration, but they know that NASA flies the Shuttle and it's a good thing.

Harris: Um-huh.

Launius: There's a positive relationship.

Harris: True. And one of the things that you were speaking of around the world, you find whenever I travel outside of the country I find much stronger interest sometimes in what's

happening in the space program than general people that I meet here who sort of take for granted; Americans take for granted the fact that their country is doing this. The rest of the world says, wow you know this is really amazing. And I can remember, I used to get calls when I was at the Press Site and at home because we publicized our home numbers in Public Affairs and, from places like Australia, from a bar in the middle of the night, well it was the middle of the night here, {laughter} I can't remember what time it was there.

Launius: It was a bar bet.

{laughter}

Harris: Yeah, with a question about a particular launch, but from other parts of the world too. Germany for instance has a number of clubs which are involved in sort of talking about space and educating their people who are members of it, and that's true in other countries as well.

Launius: In 1992 you became the Director, I think , is that the correct title, the Director of Public Affairs?

Harris: Right.

Launius: OK.

Harris: Yeah, that's changed now because they keep changing titles.

Launius: Well. . .

{laughter}

Harris: But that's what I was.

Launius: And you served until '98 when you finally, when you did retire.

Harris: Right.

Launius: Are there any things about those particular years that you'd like to say for the record?

Harris: Well, you know, no director and no person probably does anything exactly by themselves.

Launius: Um-huh.

Harris: But there are things that you're proud of because you were involved in them. And I was particularly proud of the expansion and the improvement of the Visitors Center for instance. During the time that I was the Director, we were able to have the greatest expansion that we'd

ever had here at Kennedy Space Center of what was available to the general public and allowing them to see so much more of what has gone on and what is going on in the future. Now part of that has been cut off a little bit by the events of September 2001, but I think that will come back. And it allows people to see things that are happening in real time in real places where processing hardware and gain a much better understanding of the Apollo programs and of the various other programs. So I was particularly happy with what we were able to do there. I was also particularly happy with what we were able to do in the education area. NASA has many people who are devoted to education and I think that in a large measure the general public really is not quite aware of what we do in our relationship with educators throughout the country. But we bring, well they have to pay their own way, but educators come here particularly on their own time during the summers and go through a very extensive training and familiarization type of courses to learn what is happening and what does it mean and how do you explain that to the students. So I think that NASA in general and Kennedy to a smaller part has played a major role in helping the citizens of tomorrow and the scientists and engineers of tomorrow through their teachers, through the multiplier effect, and teachers get so excited. It is always gratifying and it's always sort of amazing because in many cases they're discovering for the first time the magnitude of what's going on, so just being involved in all of that. And of course, probably my first love is working with the media because first of all they're a great bunch of people who understand their role in the knowledge of the rest of the country, or the rest of the world for that matter, and here we are able, we are very fortunate in that KSC is a focal point for the media coming to NASA. There's no other Center that hosts more media and probably has any greater influence on the story that's told around the world. And in some ways that's unfortunate. What's happening at Ames Research Center, at Goddard, at Langley, at Lewis now called the Glenn Research Center, and

Marshall, and JSC, etc., are all extremely important to the sort of the way that our civilization will be in the future. And the most exciting part though is actually getting into orbit because at Kennedy Space Center is where everything sort of flows, it's a river that comes from the minds of people and the hard work of them though who are in universities and industry and the other NASA Centers and gets their life by being put into orbit from KSC or sometimes from the West Coast and sometimes from Kodiak, Alaska, which was apparently a real challenge because of the storms and the conditions that are up there. But space has become an integral part of everyday life of people around the world and even in countries which we consider to be somewhat backward, it still is a major force there. So, I was very privileged to be here at a time to see all of this and certainly during my entire career going back to '63 and working at Lewis and other places.

Launius: Is there anything for the future that you would like to offer? Any particular words of advice or wisdom for those who follow in your footsteps leading towards spaceflight?

Harris: Well, I think that people are the most important things of all and keeping focused on why we are doing things, you know, we don't do things in space just because it is sort of a neat thing to do. I think some people get the idea there's a bunch of nerds sitting around and saying, I wonder if we throw a pebble at something, is something going to happen. The whole reason for working in space has to do with people and with the people not only throughout our country, but throughout the world. Now, what we're doing for our country is particularly significant because the economic strength and the economic viability of our country is largely dependent on our advanced technology.

Launius: Right.

Harris: And NASA has been probably the greatest force, with the exception of war and, there's a lot to not commend war, in improving that and in making us viable. We don't have the resources to sell to the rest of the world, but we do have knowledge and technology and a way of life which is terribly important to people in living peaceful productive lives and NASA has been a major force for the good in our world. And it's been a major force in the rest of the world for improving quality of life there.

Launius: Yeah and an enormously small investment in doing so.

Harris: That's right. Yeah. When you think of it as less than a penny. . .

Launius: of your tax dollar.

Harris: . . . of our tax dollars.

Launius: Right.

Harris: You know there's a tremendous, a tremendous leverage there.

Launius: Yeah. That's a good return on the investment.

Harris: That's right.

Launius: Well, I think we will leave it there and I want to thank you for being with us today. It's been enormously interesting and challenging. I appreciate your perspective. Do you have any parting comments that you wish to make?

Harris: No. I just think that people need to carry on.

Launius: Yes indeed. Well thank you, Hugh Harris, for being with us and with that we will leave it and thank you very much.